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ABSTRACT

Designed for community college social science instructors, this compilation of materials provides an overview of the literature on critical thinking. Following introductory comments, ideas are presented concerning the importance of teaching critical thinking, the conflicting opinions about the essence of critical thinking, the pros and cons of teaching critical thinking, problems in defining the concept, and seven steps involved in critical evaluative thinking. The next sections focus on: (1) seven considerations in deciding what to teach; (2) the components of critical thinking (i.e., understanding, analyzing and evaluating a secondary source; developing criteria to evaluate evidence; evaluating a primary source; and writing papers which require the creation of arguments and the evaluation of evidence); (3) ways to develop or reinforce students' disposition toward effective thinking; (4) the attitudes or characteristics of critical thinkers; (5) ways in which instructors can help students become better critical thinkers; (6) the assessment of thinking skills; and (7) ideas on initiating critical thinking instruction. Next, 13 examples are provided, illustrating class projects or individual assignments used by social science instructors to develop critical thinking skills. 250 references. (MDB)

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A Guide to Critical Thinking for Maryland Social Scientists

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By Dr. James Bell
Howard Community College
Columbia, Maryland 21044

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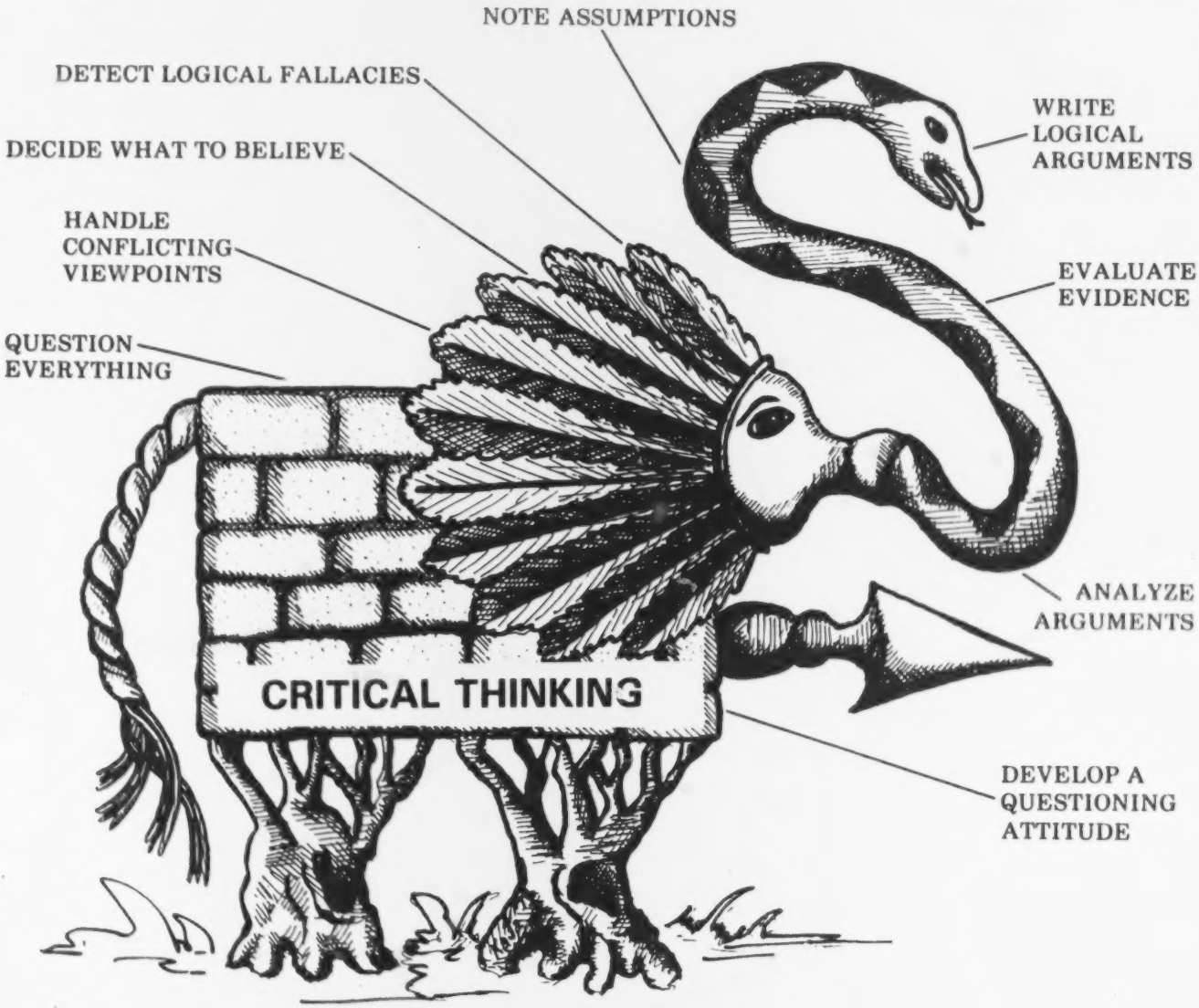

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A Summary Report of Ideas and Resources
August 1988

Howard Community College
Columbia, MD 21044
August 15, 1988

Dear Colleague:

Enclosed please find a handout which is a guide to the literature on critical thinking in the social sciences. This handout is one result of a sabbatical leave I took this year.

One of my goals was to learn more about teaching students to think critically. I began to review the literature on critical thinking and other higher order thinking skills. From this review, I found disagreements and controversies within the area, and few specific examples of how critical thinking is taught.

Consequently, I requested examples of critical thinking projects from Maryland social science faculty. Names of these faculty were obtained from Presidents of all colleges and universities in Maryland. Examples obtained from Maryland faculty are included in this report. I wish to thank those who provided me with these examples, ideas, and sources.

Originally I had planned to send out just the specific examples of critical thinking assignments. However, people I talked with during the past year suggested that I share a summary of my review and a list of resources. I believe this information can be used by social science faculty who want to include critical thinking in their courses, and by faculty, supervisors, and committees who need to study the wider expanse of the field.

After having put together this handout, I thought about what I had learned. On the next page are some of my reflections about the topic of critical thinking. I put these ideas first to help in understanding this handout.

An idea, that has been recently suggested, is to have a conference in Maryland this year for faculty who are looking into the issues involved with teaching thinking skills. The possibility of a conference is now being explored with the Maryland Center for Critical Thinking and Assessment.

Two copies of this report are being sent to each college and university in Maryland. In addition, one copy is being sent to all those who contributed to this report, and to social studies supervisors in Departments of Education in the various counties in Maryland. If additional copies are desired, feel free to make copies or write to me c/o the HCC Bookstore, Howard Community College, Columbia, MD 21044. Please include a check for $2 per copy made out to HCC Bookstore. We will send out copies promptly.

If you wish to respond to the ideas here or ask for additional information, please contact me at the address below.

Dr. Jim Bell
Howard Community College
Columbia, MD 21044

Office Phone-1(301) 992-4892
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Sincerely,

Jim Bell

Jim Bell
Professor of Psychology

My Reflections On The Teaching Of Thinking In The Social Sciences

1. Experts and teachers agree that critical thinking is an important goal for social science classes.

2. Experts disagree on how to define critical thinking both generally and specifically. Professor Peter Facione is presently conducting research on how experts believe that critical thinking should be defined. I believe that critical thinking, problem solving, decision making, and creativity are diferent areas of thinking and will need to be taught differently.

3. Since there is little agreement on what critical thinking is, there is not agreement on how to assess it. However, progress is being made and a number of interesting tests have been developed and are being developed.

4. Thinking skills can be integrated into present social science classes. Students do not appear to learn to think critically unless they use the skills in many classes. The terms "embedded," "infused," "incorporated," and "included" seem to mean the same thing as "integrated."

5. At least some of the time, thinking skills will need to be taught explicitly. In the process of explicitly teaching students to think critically, these students will benefit from receiving feedback about their thinking.

6. The teaching of thinking builds on reading, writing, and study skills. Thinking Across The Curriculum can pull together the "Writing Across the Curriculum" and "Reading Across the Curriculum" movements.

7. Individual thinking, pair learning, group discussion, cooperative learning and total class activities facilitate the teaching of thinking. Written assignments based on thinking can be developed and used in place of some recall tests.

8. Teaching and encouraging students to think will make teaching more exciting and challenging, and has the potential to decrease faculty burnout.

P.S. The artwork on the cover is a creative synthesis of the pictures in the minds of the men in the fable "The Six Blind Men and The Elephant".

Overview On The Teaching Of Critical Thinking

I. Is It Important To Teach Thinking?

American high schools and colleges have long claimed that one of their major goals is to produce effective thinkers. National Commisions, professional organizations, business groups, educational associations, and government spokespersons have agreed. Seven recent books document the interest in producing effective thinkers (Ruggiero, 1988, *Teaching Thinking Across the Curriculum*; Presseisen, 1986, *Thinking Skills;* Mazarno et al., 1988, *Dimensions Of Thinking;* Heiman and Slomianko, (Eds.), 1987, *Thinking Skills Instruction: Concepts and Techniques*; Brookfield, 1987, *Developing Critical Thinkers*, Beyer, 1987, *Practical Strategies For The Teaching Of Thinking;* Baron and Sternberg, (Eds.), 1987, *Teaching Thinking Skills*).

Although a major goal of education is to improve thinking, the evidence suggests that few teachers either explicitly teach or test for improved thinking (Benderson, 1984; Ruggiero, 1988). In my discussions with teachers this year there was agreement that few teachers specifically teach critical thinking in social science courses, but that some assignments were given which required critical thinking.

Recently Maryland two and four year colleges have been requested to include in their general education requirements the goals for students to reason abstractly and to think critically. Individual colleges will be deciding how best to teach these thinking skills and how to assess them.

Selected Sources On Whether To Teach Thinking Skills

McTighe, J. and Schollenberger, J. (1985). Why teach thinking: A statement of rationale. In A. Costa (Ed.). *Developing minds*. Alexandria, VA: Association for Supervision and Curriculum Development.

Nickerson, R. S. (1987). Why teach thinking? In J. B. Baron and R. J. Sternberg (Eds.). *Teaching thinking skills* (27-37). NY: W. H. Freeman.

Paul, R. (1984). Critical thinking: Fundamental for education in a free society. *Educational Leadership*, 42, 1, 4-14.

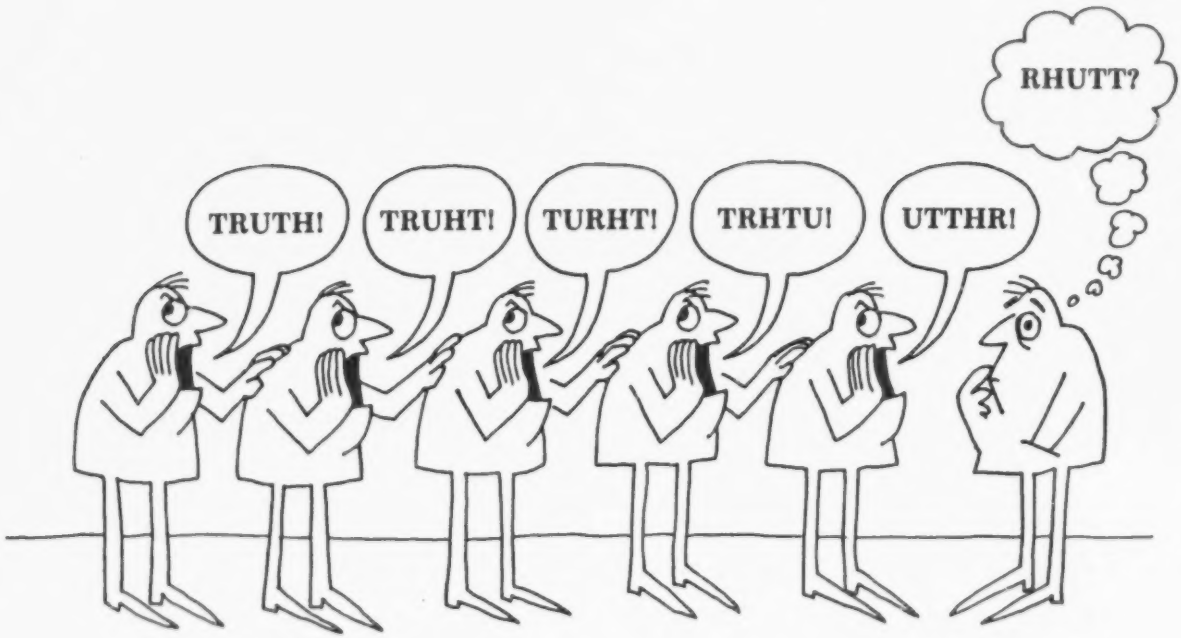
Scriven, M. (1985). Critical for survival. *National Forum, LXV*, 1,9-12.

Siegel, H. (1985). Educating reason: Critical thinking, informal logic, and the philosophy of education. *Informal Logic, vii*, 2 & 3, 69-81.

II. What Is The Truth About Critical Thinking?

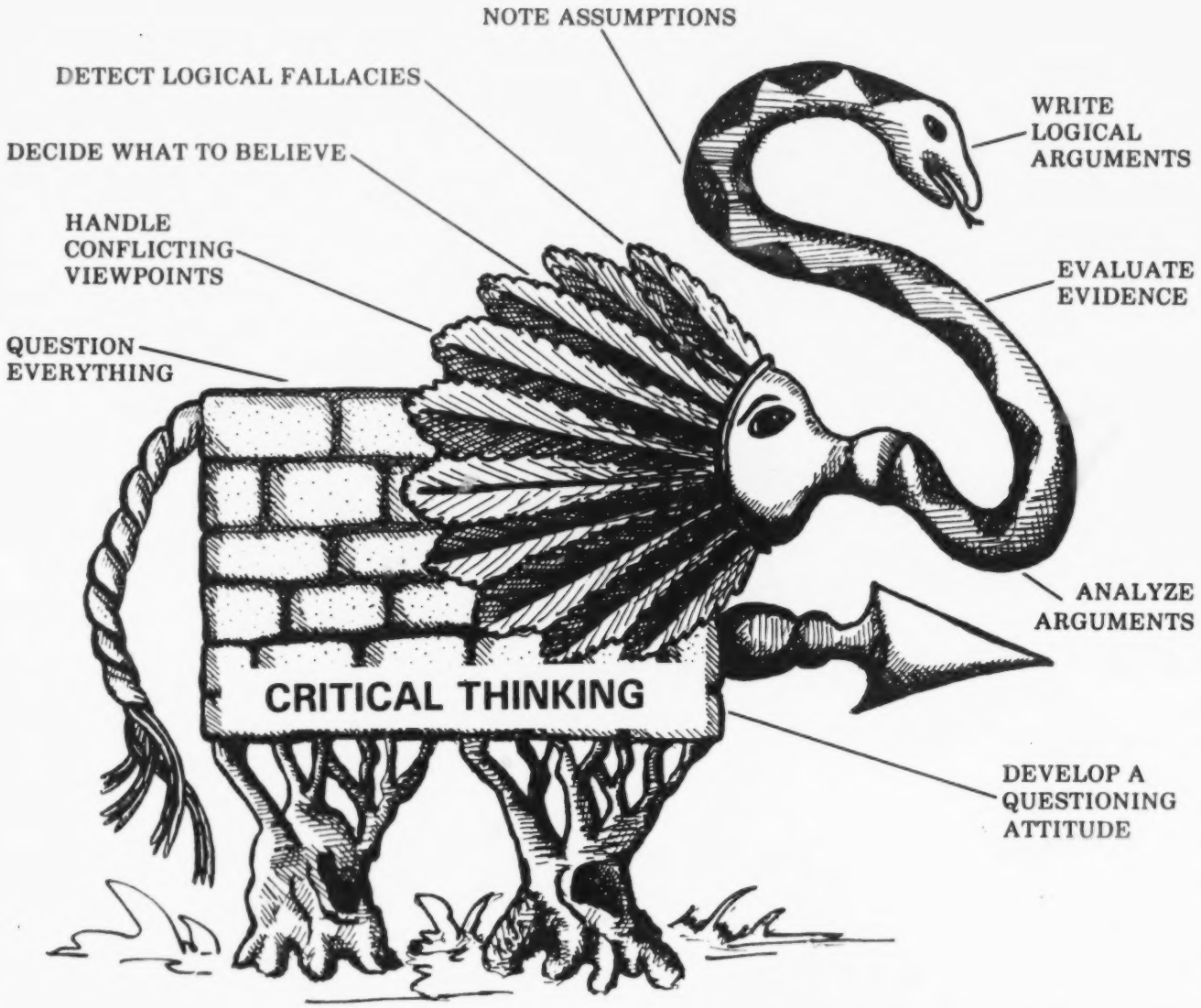
III. What Is The Essence Of Critical Thinking?

What is the Truth about Critical Thinking?



Some Distortion and Confusion Has Developed Surrounding Critical Thinking.

What is the Essence of Critical Thinking?



CONCLUSION: There is little agreement on what critical thinking is, what its components are or how it can best be taught.

3

IV. Do I Want To Teach Critical Thinking?

Pros -

1. The rapid growth of information will change many of the facts I now teach.
2. Students retain skills better than facts.
3. Students need to be able to analyze, evaluate and create as well as recall what various authors have to say.
4. Teaching thinking is interesting and a challenge.
5. The goal of improved thinking is a major goal for college because of its importance beyond college.
6. Thinking skills are best taught in content courses across the entire curriculum.
7. Other pros you can think of.

Cons -

1. The rapid growth of information has produced additional important information to cover in my course. If I add in thinking skills, I will have to omit some important information.
2. Students have not been taught thinking skills. Consequently, time will be lost teaching basic thinking skills.
3. Students pick up thinking skills by completing a variety of courses. Therefore, it is not necessary to explicitly teach thinking skills. My students already have to think to pass my course.
4. I am not sure how you go about teaching thinking skills. How do you decide which ones to teach?
5. Teaching thinking skills seems to be big now. How do I know that this isn't just another educational fad?
6. Won't the teaching of thinking skills require additional feedback to students? I am stretched too thin now. I don't have time to give more feedback.
7. Problem solving and decision making are more appropriate for my courses than critical thinking.
8. Other cons you can think of.

V. What Are Some Of The Problems In Defining Critical Thinking?

Defining critical thinking is not easy. One reason is that several disciplines lay claim to critical thinking. There is little agreement across disciplines and sometimes within disciplines. Philosophy, cognitive psychology, educational psychology, the social sciences and the area of reading differ in what is emphasized. Recently some authors have been using critical thinking to refer to any of the higher order thinking processes which adds further confusion.

So you can be aware of my perspective, I have been teaching psychology for twenty-two years at the college level. Seventeen years ago I started teaching students to critically evaluate secondary sources in psychology. I got my ideas from Ennis' (1962) article on critical thinking and a student in a General Psychology class. Also I now teach a course in our philosophy department entitled Logic and Critical Thinking. One of my teaching goals is to better understand critical thinking so I can teach my students to critically think in psychology and to encourage them to increase their concern for good reasons and evidence when deciding what to believe, both in and out of the classroom.

Here are some of my conclusions about defining critical thinking.

1. Experts and teachers agree that critical thinking should be an important goal for social science classes.

2. Experts disagree on how to define critical thinking in general and specifically.

3. As a teacher in the social sciences, these definitions help me focus student attention on evidence and deciding what to believe.

a. "Critical thinking is reasonable reflective thinking that is focused on deciding what to believe or do." (Ennis, 1987, p. 10)
b. "When we think critically, we evaluate and judge the accuracy of statements and the soundness of the reasoning that leads to conclusions. Critical thinking helps us interpret complex ideas, appraise the evidence offered in support of arguments, and distinguish between reasonable and unreasonableness. Both problem solving and decision making depend on critical thinking, as does the meaningful discussion of controversial issues." (Ruggiero, 1984, p. 13)
c. "Development of critical thinking skills involves understanding of standards used to assess the validity of statements made about the social world, appreciation of the rationale for those standards, and the ability to apply the standards in a wide variety of contexts." (Smith, 1983, p. 210)

There are other higher order thinking processes that can be taught to social science students. These are problem solving, creativity, decision making, and metacognitive thinking (Beyer, 1987) or the dimensions of thinking called critical thinking and creative thinking and the thinking processes of concept formation, principle formation, comprehension, problem solving, decision making, research, composition, and oral discourse (Marzano et al., 1988). In this handout I will focus on critical thinking.

Critical thinking in the social sciences is relevant in three different areas of thinking: (1) **the evaluation of information,** (2) **the evaluation of ideas as a part of creative problem solving,** and (3) **the evaluation of our own observations and thinking**.

(1) **The critical evaluation of information in a communication** has as its purpose deciding what to believe. Sometimes that belief will be followed by action. Deciding what to believe when reading a source involves first understanding the message and then evaluating the message.

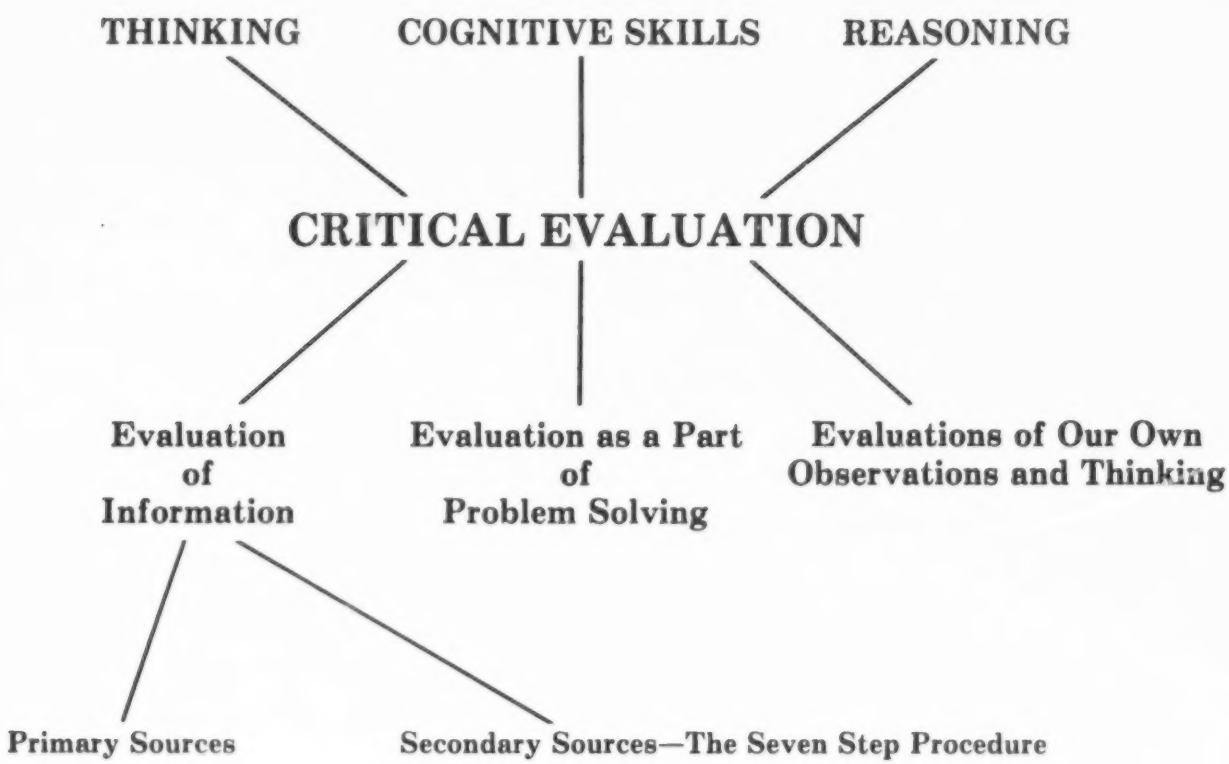
Evaluation starts with careful attention to key terms and propaganda techniques. Next the evidence and reasoning are identified and evaluated. Lastly, students decide what to believe.

The desire to use these skills to decide what to believe based on reliable evidence and effective reasoning has been called reflective skepticism or the critical attitude. Beginning psychology students can be taught to evaluate secondary sources while upper level psychology students can learn to evaluate primary sources.

(2) Critical thinking is also **a part of creative problem solving.** After the problem has been defined and several possible solutions have been proposed, critical thinking is used to select the best solution. Critical thinking is also useful when thinking about how to handle obstacles when putting the solution into practice.

(3) Critical thinking can be used to help each of us **be more careful in drawing conclusions from our own observations and thinking.** Besides training our critical thinking on others, we can check our own observations with a dose of skepticism. For example, we can become more aware of our tendency to jump to conclusions or learn about the limitations of eyewitness reports, our own included. Metacognitive thinking involves thinking about how we are thinking. For example, being aware of how well we are understanding a source or checking how we solved a problem to do a better job in the future.

On the next page is a diagram of how I see critical thinking in the social sciences and the 7 step procedure that I currently use with my students. If you wish further information on how I teach crticial thinking, please write or call.



Step 1: Identify the Source.

Step 2: Describe the meaning of the communication.

Step 3: Analyze and Evaluate the Definitions of Important Terms.

Step 4: Analyze the Evidence.

Step 5: Evaluate the Evidence.

Step 6: Evaluate the Reasoning.

Step 7: Evaluate the Source by Using OTHER Sources, Both Primary and Secondary.

7 Steps of Critical Evaluative Thinking

Step 1: Identify the source.

a. Identify the author.
b. Identify where the source was published.
c. Identify the year it was published.

Step 2: Describe the meaning of the communication.

a. State the central idea.
b. Identify the key supporting points.
c. Identify the conclusions.

Step 3: Analyze the definitions of important terms.

a. Identify important terms not defined.
b. Identify any words used incorrectly.
c. Identify propaganda techniques and correctly label them.

Step 4: Analyze and identify the psychological research evidence.

a. Nonscientific evidence (identify for use in Step 6).
   (1) self-evident truths, opinions, rumors, sayings, inferences, value judgments.
   (2) expert testimony, unsupported assertions
   (3) personal experiences
b. Scientific evidence and theories - Analyze the article to be able to identify:
   (1) hypotheses
   (2) psychological facts
   (3) psychological principle
   (4) tentative psychological facts
   (5) theories

Step 5: Evaluate the psychological facts and the related reasoning.

a. Citation - Identify who did the study and when.
b. Subjects - Identify the characteristics and number of subjects. Evaluate the selection process.
c. Procedure - Describe the procedure. Evaluate the procedure.
d. Results - Identify the probability tag. Evaluate the results.
e. Reasoning - Evaluate the reasoning.
f. Describe any conflicting evidence.

Step 6: Evaluate the rest of the article (not the research evidence).

a. Evaluate the quality of the evidence for the key points and central idea.
b. Evaluate the quality of the reasoning throughout the article.
c. Draw your own conclusions about what to believe.

Step 7: Evaluate the source using other sources.

a. Compare, contrast, and evaluate with other secondary sources dealing with the same evidence.
b. Compare, contrast, and evaluate with other secondary sources dealing with similar evidence.
c. Compare, contrast, and evaluate with the primary source.
d. Compare, contrast, and evaluate with similar primary sources.

Thinking About Teaching Critical Thinking

I. Which Critical Thinking Skills Should I Teach?

Here are 7 questions to think about when deciding what to teach.

A. What are the most important critical thinking skills my students will need in the future that are a part of my discipline?
B. What areas of my course are students not learning as I would like?
C. Which critical thinking skills do I now test but not teach as well as I could?
D. Which aspects of critical thinking can I realistically handle in my present courses?
E. Which aspects of critical thinking can I enthusiastically teach?
F. What factual knowledge and concepts are needed as a foundation for the critical thinking skills I want to teach?
G. What attitudes do I want to cultivate about critical thinking?

II. Where Can I Find A List Of Thinking Skills And Attitudes?

A. Here is my understanding of the components of critical thinking in the social sciences.

When given one secondary source, students will critically evaluate the source (the criteria have been taught).

1. **Understanding a communication (a secondary source).**
   a. Involves a number of reading and study skills including drawing inferences, drawing conclusions, interpreting data, interpretating graphs and charts.

   b. Students demonstrate understanding of a source by writing an annotation, abstract, paraphrase, summary, or an outline or by summarizing verbally.

   c. Students draw broad inferences from the total source, state the author's conclusions, and interpret data, graphs, and charts within the source.

2. **Analyzing a communication**
   a. Involves a number of reading and thinking skills.

   b. Students demonstrate the ability to analyze by identifying the components of the communication: central idea, key points, key terms, definitions, hypotheses, evidence, conclusions, propaganda techniques, emotional language, arguments.

   c. Students can draw specific inferences from the author's ideas, data, graphs, and /or charts.

   d. Students can predict which evidence will support a statement.

3. **Evaluating a communication**
   a. Involves knowing what criteria to use.

   b. Students demonstrate the ability to evaluate by identifying assumptions, detecting illogical reasoning, detecting weak evidence, detecting value judgments, detecting invalid inferences and detecting incorrect conclusions.

c. Students explain what important ideas or information has been left out, detect if examples fit with a concept, detect errors in statistical reasoning, and detect if evidence supports a theory.
d. Students can compare and contrast ideas and evidence within the source to draw conclusions.

When given a source, students will develop criteria to use when critically evaluating.

4. **Developing criteria to use to evaluate**
   Here students are asked to develop their own criteria to evaluate evidence or a presentation. I have not found information developing this idea.

When given a primary source, students will use criteria to critically evaluate the source.

5. **Evaluating a primary source**
   In psychology there are a number of sources which provide criteria for students to use when dealing with primary research reports. The process for critiquing research reports is taught in Experimental Psychology courses and other upper level psychology courses. I have not thought much about this area since it is taught and tested in selected upper level psychology courses.

When given a topic, students will locate evidence, evaluate the evidence, synthesize the evidence, and draw conclusions.

6. **Writing papers which require the student to create arguments and evaluate evidence.**
   a. Involves the above skills mentioned above plus writing skills, library searching skills, and ability to create arguments after evaluating the relevant evidence.
   b. Students write a persuasive paper on a given topic by creating reasonable arguments and citing relevant evidence.
   c. Students compare and contrast when applicable to be able to draw conclusions.
   d. Students synthesize the ideas and evidence.
   e. The paper should be well written, properly documented, organized, and proofread.
   f. Students efficiently and efficiently search the library to find information.

B. **Sources On Thinking Skills**

1. Ennis, Robert. (1985). A taxonomy of critical thinking dispositions and abilities. In J. Baron & R. Sternberg (Eds.). *Teaching thinking skills: Theory and practice* (pp. 9-26) NY: W. H. Freeman.

2. Bloom's taxonomy
   a. Bloom, B. S. et al. (Eds.). (1956). *Taxonomy of educational objectives, handbook I: Cognitive Domain*. NY: Longmans, Green.

   b. Bloom, B.S., Hastings, J.T., and Madaus, G.F. (1971). *Handbook on formative and summative evaluation of student learning*. NY: McGraw-Hill.

c. Sanders, N. (1966). *Classroom questions: What kinds?*. NY: Harper and Row.

3. Marzano, R. J. et al. (1988). *Dimensions of thinking: A framework for curriculum and instruction*. Alexandria, VA: ASCD.

4. Arter, Judith & Salmon, Jennifer. (1987). *Assessing higher order thinking skills: A consumer guide.* Portland, Oregon: Northwest Regional Educational Laboratory.

5. *The New Jersey Test of Reasoning Skills* tests an extensive number of reasoning skills.

III. What Dispositions Support Better Thinking? (attitudes, traits)

This topic has not been discussed as much in the literature as thinking skills. Listed below are two lists I found useful.

A. **Developing or Reinforcing the Dispositions Associated With Effective Thinking.** (Ruggiero, 1988, pp. 68-76, quoted)

1. Interest in the sources of their attitudes, beliefs, and values
2. Curiosity about their mental processes and eagerness to develop them further
3. Confidence in their abilities and a healthy attitude about failure.
4. Willingness to make mistakes
5. Sensitivity to problems and issues
6. A positive attitude toward novelty
7. Interest in widening their experience
8. Respect for and willingness to use intuition when appropriate
9. The desire to reason well and to base judgments on evidence
10. Willingness to subject their ideas to scrutiny
11. Willingness to entertain opposing views without reacting defensively
12. Curiosity about the relationships among ideas
13. A passion for truth
14. A healthy attitude toward argumentation.

B. **Attitudes (Dispositions) of a Critical Thinker** (Ennis, 1987, p. 12 quoted)

1. Seek a clear statement of the thesis or question.
2. Seek reasons.
3. Try to be well informed.
4. Use and mention credible sources.
5. Take into account the total situation.
6. Try to remain relevant to the main point.
7. Keep in mind the original and/or basic concern.
8. Look for alternatives.
9. Be open-minded.
   a. Consider seriously other points of view than one's own (dialogical thinking).
   b. Reason from premises with which one disagrees--without letting the disagreement interfere with one's reasoning (suppositional thinking).
   c. Withhold judgment when the evidence and reasons are insufficient.
10. Take a position (and change a position) when the evidence and reasons are sufficient to do so.
11. Seek as much precision as the subject permits.
12. Deal in an orderly manner with the parts of a complex whole.
13. Use one's critical thinking abilities.
14. Be sensitive to the feelings, level of knowledge, and degree of sophistication of others.

C. Sources On Thinking Dispositions

1. Burton, W., Kimball, R. & Wing, R. (1960). *Education for effective thinking*. NY: Appleton-Century-Crofts, pp. 38-39.

2. See Ennis (1985) mentioned above.

3. Glatthorn, A. A. and Baron, J. (1985). The good thinker. In A. Costa (Ed.). *Developing minds*. Alexandria, VA: Association for Supervision and Curriculum Development.

4. Paul, R. W. (1988, March-April). The critical thinker: The significance for thinking of traits of mind. *Teaching Thinking and Problem Solving*, 10, 2, 5-7. Paul explains seven interdependent traits of mind: intellectual humility, intellectual courage, intellectual integrity, intellectual empathy, intellectual perseverance, intellectual faith in reason, and intellectual sense of justice.

5. Ruggiero, V. R. (1988). *Teaching thinking across the curriculum*. NY: Harper and Row. Ruggiero lists and discusses dispositions associated with effective thinking, producing ideas, and evaluating ideas.

IV. In What Ways Can We Help Students To Become Better Critical Thinkers?

A. Include thinking skills in our course goals which are given to students at the start of the course.

1. What thinking skills should be taught in this course?
   a. What thinking skills can students do at the start of this course?
   b. What thinking skills do students need to be successful in this course?
   c. What thinking skills should they be able to do at the end of the course?
   d. At what points in the course do students have difficulty?
   e. Are there underlying skills that must be taught before teaching the new skills?

2. What thinking skills do professionals in this field use to deal with the problems of the field? Should some of these skills be included in this course? such as
   a. Problem Solving
   b. Decision Making
   c. Creativity
   d. Critical Thinking
   e. Communication Skills
      1) Writing Skills
      2) Group Discussion Skills
   f. Working With Others
   g. Comprehension Skills
   h. Library Searching Skills
   i. Time Management Skills
   j. Learning To Be A Self-Directed Learner

B. Teach thinking skills within the course. Here are some of the words used to describe this process: embedded, integrated, infused, incorporated, included. Many assignments can be modified to require more thinking.

C. Model the attitudes, skills, and knowledge of critical thinking both in class presentations and in handouts.

D. Explicitly teach the knowledge and skills necessary to critically think. Encourage and reinforce students for demonstrating the attitudes favorable to thinking critically.

Beyer (1987, p. 102) suggests the following steps to explicitly teach thinking skills.

Step l: Introduce the skill.
Step 2: Explain the skill.
Step 3: Demonstrate the skill.
Step 4: Review what was done.
Step 5: Apply the skill.
Step 6: Reflect on the skill. (quoted)

E. Carefully sequence the teaching of critical thinking.

F. Give students situations in which critical thinking can be used and encourage them to use their thinking skills.

G. Teach students how to think about their own thinking (metacognitive thinking).

H. Provide feedback to students on how they are thinking.
   1. Wait for at least 3 seconds after asking students a thought question to give them time to think.
   2. Wait for at least 3 seconds after an answer is given to allow time for others to think.
   3. Provide written comments on homework and tests.

I. Teach students to use what they are learning in the classroom to situations beyond the classroom (application, transfer).

J. Ask broad questions in class to allow for more thinking. Review Bloom's taxonomy as explained in Sanders (1966) to get in more higher level questions.

K. Increase the amount of time students actively think about what they are learning. Short written assignments, giving time for students to individually think about a question or problem, and using small groups (pairs learning together, groups of 3, 4, or 5 students). One way communication in the classroom will need to be decreased.

L. Use graphic organizers whem possible. Pictures, figures, and diagrams can help clarify what is being learned.

V. How Can We Assess Thinking Skills?

A. Develop your own assignments and tests . (Asking students to critically evaluate something that has already been evaluated in the course is testing memory, not critical thinking.)

B. Borrow ideas from other teachers.

C. Use standardized tests. See the sources below.

D. Ask students to report examples of how they are using critical thinking.

E. Encourage students to develop assignments which use critical thinking skills.

F. SOURCES

1. Arter, Judith and Salmon, Jennifer. (1987). *Assessing higher order thinking skills: A consumer's guide.* Portland, Oregon: Northwest Regional Educational Laboratory. Very useful source.

2. Baron, Joan. (1985). Evaluating thinking skills in the classroom. In Joan Baron and Robert Sternberg (Ed.). *Teaching thinking skills: Theory and practice* (pp. 221-247) NY: W. H. Freeman.

3. Norris, S. P. (1986). Evaluating critical thinking ability. *History and Social Science Teacher*, 21, 135-146.

4. Norris, S. P., & Ennis, R. H. (in press). *Evaluating critical thinking*. Pacific Grove CA: Midwest Publications.

VI. Ideas On Getting Started

A. Jump right in. Few of us were explicitly taught thinking skills. Consequently, we have few models to follow.

B. Start small. Try a new assignment with a few students.

C. Be persistent. Success is not usually instant. You may need to change some student attitudes and/or start at a more basic level. You may need to sharpen some reading, writing, and/or study skills first.

D. Build on the work and ideas of others.

E. Watch for examples from everyday life and the mass media. They pop up all of the time.

F. Critical thinking assignments can be used with textbooks.
   1. What is the most important topic in this book? How did you decide?
   2. What is the author arguing? What is his evidence?
   3. What could the author have done to make this book easier to study from?

G. Build in a process for getting feedback from students on the teaching of critical thinking. Keep notes on their ideas.

H. Develop a network with others who are teaching critical thinking to share experiences and ideas.

BACKGROUND SOURCES FOR TEACHING CRITICAL THINKING IN THE SOCIAL SCIENCES

Baron, Joan and Sternberg, Robert. (Eds.). (1987). Teaching thinking skills: Theory and practice. NY: Freeman.

Beyer, Barry. (1987). Practical strategies for the teaching of thinking. Boston: Allyn and Bacon.

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CRITICAL THINKING EXAMPLES FROM MARYLAND FACULTY

TO: JIM BELL
FROM: HELEN MITCHELL Howard Community College
SUBJECT:THINKING SKILLS

In my Introductory Philosophy course I teach the students to do an analysis of a work of fiction with a philosophical theme. This culminates in the students' doing what I call a "Reflective Report or Paper". I have allowed students to present these orally on some occasions, on others I have required that they be written. In either mode of presentation the process is the same. I have attached the instructions I give the students on the first night of class which serves as their reference. However, we spend much time discussing the project, how it is to be done and what is important for them to look for in the work they choose.

The major text for the course (Vincent E. Barry Philosophy: A Text With Readings) concludes each chapter of text with a short literary selection which illustrates the philosophical theme of the chapter. So, from the very first assignment, we begin to discuss philosophy as subject matter and at the same time we see how it is expressed thematically in literature. Excerpts from a modern version of Antigone, for example, illustrate ethical postions as Creon and Antigone argue (literally to the death) about what is the right thing to do. A selection from Huxley's Brave New World is used to illustrate social philosophy and the relationship between the individual and the state. The chapter on metaphysics includes a chapter from Hermann Hesse's work Siddhartha which gives the Buddhist view of reality and provides an interesting contrast with more familiar western ones. At each juncture the students have the opportunity to analyze a work of fiction for its philosophical content. Sometimes this is done in large group discussion, other times the students are given a specific assignment to work on in small groups. The chapter on human nature, which contains John Barth's short story "Night Sea Journey" featuring a philosophical spermatazoon as protagonist is particularly well suited to this as is the chapter on truth in which seven different versions of an incident make up Ryunosuke Akutagawa's story "In a Grove".

Students are given a list of works which contain ome novels that have philosophical themes but are encouraged to select something which interests them. They may choose an album of somgs, a movie, a book of poems or a play as well as a novel. I have received excellent papers on the albums of Pink Floyd, Woody Allen's movie "The Purple Rose of Cairo", the current film "Platoon" and the cult favorite "Rocky Horror Show" (as a commentary on the Vietnam War).

The point of the assignment is to help students see that philosophy is not just something in a textbook but is a part of every person's life whether or not they can articulate their experiences in philosophical terms. Students often tell me that although this assignment is difficult it is the most useful.

REQUIREMENTS FOR REFLECTIVE REPORT

This is to be a reflective rather than a research report which means that the emphasis will be on your own reflections rather than on the thoughts of the scholarly community. However, you might want to read some critical works as background for your own reflections.

You are to choose a work of literature (novel, play, extended essay, or collection of poems) with a philosophical theme and then analyze that work in terms of the philosophy expressed. You should include the following:

1. a clear statement of the philosophical theme.
2. relating of the theme to your readings and our class discussions about philosophy as a whole.
3. the author's life experiences (including nationality, ethnicity, gender, for example) as shapers of his/her philosophical views.
4. your own analysis of and reaction to the theme.
5. supporting passages from the work which illustrate your points.

The following will be considered in evaluating this report:

1. clear thinking.
2. originality and depth of ideas presented.
3. appropriateness of quoted passages.
4. clear and concise writing.
5. correct grammar and mechanics.
6. neatness.

Below is a list of works from which you may choose. These are by no means the only possible choices. You may choose another work WITH THE APPROVAL OF THE INSTRUCTOR. Please bring the work to class with you.

Ellison, Ralph The Invisible Man - the quest for self-discovery.
Satre, Jean-Paul Nausea - freedom, ambiguity, anxiety, and nothingness.
No Exit - Hell is other people.
Thoreau, Henry David Walden and Other Writings - an autobiographical statement of personal freedom.
Burgess, Anthony A Clockwork Orange - who is less moral, an individual with no moral sense or the society that tries to "rehabilitate" him?
Golding, William Lord of the Flies - the darker side of human nature.
Pirandello, Luigi It Is So If You Think So in Naked Masks - the subjective and objective nature of truth.
Anthony, Piers Macroscope - sci fi fantasy beyond space and time.
Coover, Robert The Universal Baseball Association - a person creates a world of baseball players who ultimately dismiss their creator.
Camus, Albert The Plague - the problem of evil and suffering.
Dostoyevsky, Fyodor The Brothers Karamazov - evil in the world.
Carroll, Lewis Alice in Wonderland - Is life absurd?
Kafka, Franz The Trial - guilt and innocence.
O'Neill, Eugene The Great God Brown - masks and the self.
Walker, Alice The Color Purple - the redemptive power of human love.
Endo, Shusaku Silence - the many sides of right and wrong.
Bellow, Saul Henderson, The Rain King - a search for the meaning of life.
Updike, John Rabbit Run - another search for the meaning of life.
Heller, Joseph Something Happened - still another search.
Catch 22 - same search.
Sagan, Carl Contact - Clues to the meaning of life.

Almost any work C.S. Lewis or Graham Greene will have a philosophical/religious theme. Much science fiction is also quite philosophical.

Richard Caston
University of Baltimore
Baltimore, Maryland

Course Description

A course providing an exploration of the interrelationship between business and other sectors of society. Among the dimensions to be covered are economic, ethical, legal, political, and social implications of decision making in business. Historical and contemporary practices will be investigated.

BUSINESS AND SOCIETY

CASE STUDY DESCRIPTION

Each student will write up a brief case study of an issue that illustrates the social and ethical implications of a business practice. Possible topics include issues in product quality and safety; marketing and advertising strategies; finance and accounting practices; personnel selection, training and benefits practices; governmental regulations; environmental pollution; multinational business issues; business sponsored political action committees; etc. The topic selected may be either something that has been experienced first hand by the student or something the student has read about in a newspaper or journal (be aware that the Wall Street Journal and Business Week are good sources for such material). If the business practice to be discussed is drawn from first hand experience, please disguise the identity of the business.

The primary purpose of this exercise is to assist students in developing their skills in writing, critical thinking and oral presentation. Therefore, it is expected that the case study will be developed through several drafts and will be improved as a result of feedback from the instructor and from other students. Students will also have the opportunity to make an oral presentation of their case study.

Students will prepare five parts to their case study. The first part will consist of an executive summary of the report. The second part will identify the business problem that is to be examined and will describe its social and ethical implications. The third part will identify and analyze at least two strategies for resolving the business problem relative to the social and ethical concerns that have been identified in the first part and to traditional business concerns for profitability. The final part of the case study will provide the student's personal recommendation for what actions the business should take. Full citations and references will be expected using the format found in Donaldson and Werhane (e.g., see page 392 or 197-198).

The entire case study should not exceed four (4) single-spaced pages and should be written as if it were a technical report being submitted to the chief executive officer of the company at issue (or to the owner, in the case of a small business). If possible, the case studies will be brought together at the end of the semester into a class pamphlet.

SUGGESTED OUTLINE		TIME FRAME	
1. Executive Summary.			
2. Statement of Problem.		Topic Selected	Sept. 17
3. Analysis of Alternative Actions and Implications.		First Draft	Oct. 22
		Oral Presentation	sometime in Nov.
4. Recommendations			
5. References		Final Draft (typed, single-spaced)	Dec. 3

a. Tom Walker, Montgomery College, Germantown Campus, Germantown, Maryland 20874.
972-2000 x 310 - office; 840-1757 - home

b. In order to encourage students in my history classes to think critically, I assign two three-to-five page book reviews. Students select the titles with my approval; the only criterion is that the book's subject must fall within the chronological/topical framework of the course.

c. The American history survey is divided into two courses: Beginnings to the End of the Civil War and Reconstrcution to the Present. Each class numbers 25 to 35 students, 54% of the students are females and 46% are males. Approximately 35% of the students are adult students who are returning to college.

d. The book review assignment helps the students summarize information and trains them to look for the core ideas in written materials. Checking out an author's credentials helps develop evaluation skills. Comparing the book with another source helps them synthesize materials. Including information from professional reviews stimulates judgment and gives the students ideas how they might approach their own review. Requiring the student to explain his opinions reinforces all of these evaluative skills.

TEACHING THE REVIEWING PROCESS

I discuss the handout with the students by elaborating on the five points (three points for the novel) listed on the instruction sheet. In order to facilitate summarization of the book's contents I discuss how to read a book for its thesis and how to boil down the thesis to its essential core. Students learn to look for the thesis in the preface, first or last chapters; they learn to consult the Table of Contents to gain an idea of how the author has organized his materials. When discussing the search for the author's qualifications I stress the importance of educational background and professional contributions. I include the point about questioning an obscure author whose credentials are lacking in order to sharpen their reflective skills. From internal evidence, e.g., bibliography or sources cited in footnotes, students judge whether their author is an expert on the topic. This skill is reenforced by comparing their book with another book on the same topic. This second book may agree with or attack the thesis of the student's book. This gives her additional information on which to base her judgments. It also helps in evaluating the author. Consulting professional book reviews further reenforces the data and judgments students have begun to formulate. I encourage the students to give their own opinions but require them to substantiate, using data from their research, any judgments they make. This helps them assess the significance of their author's contribution.

The hardest skills to develop in this assignment are the ability to formulate a thesis and the selection of bias or prejudice in the book. In order to help the students grasp these concepts, I discuss numerous examples and point out the thesis of my lectures and indicate my personal biases in historical interpretation.

INSTRUCTIONS FOR REVIEWING BOOKS

Dr. Walker

Technical Requirements: The review should be 3-5 double-spaced, typewritten pages (5-8 handwritten). Please proof-read the final draft to eliminate errors in punctuation, grammar, and spelling. At the top of the review state the title of the book, the author's name, the city in which the book was published, the name of the publisher, and the date of publication. This information is located on the title and copyright pages of every book, or you can copy it from the card in the library catalog.

Content of the Review:

1. Briefly describe the contents of the book. On what events or phenomena is the author focusing his attention? What are the major points of his story? What thesis does the author argue? You should summarize the thesis of the book in a single sentence. Remember that a thesis is a debatable statement, e.g., the Civil War was caused by slavery or the Civil War was caused by sectional rivalry between North and South.
2. What are the author's qualifications for writing the book? Check such standard reference sources as Who's Who, Who's Who in America, Current Biography, Twentieth Century Authors, Directory of American Scholars. Ask the reference librarian to help you locate the qualifications of authors whose names are difficult to find. If you cannot find your author, indicate in your review the sources which you consulted. Does this lack of biographical information cause you to question the author's qualifications for writing on this subject?
3. How have others interpreted the topic? Consult at least one other book related to your book and weigh this interpretation against your author's analysis. This must be included in your review. Textbooks or general reference books, however, are not acceptable comparative sources.
4. What are the opinions of others about the book you have read? Check at least two reviews of your book and include these assignments in your review. There are several references, such as the Book Review Digest, Book Review Index, An Index to Book Reviews in the Humanities, The Saturday Review Index, which indicate the locations of book reviews.
5. What is your opinion of the book? Does the author use his sources with care? Is the author swayed by a definite prejudice or bias? Cite specific examples of bias or prejudice. Do you believe that the thesis is convincing? Why? Has the author persuaded you to accept his point of view? Why? Explain the basis for all of your comments.

Reviewing a Novel:

1. Give a synopsis of the book's plot and describe the characters in the story. State the thesis of the novel.
2. Consult the opinions of others. These may exist in the form of book reviews or books written by literary critics. Show evidence in your analysis that you consulted at least five critics.
3. In your analysis of the novelist and his work focus on two major points: characterization and universals. Discuss how the author portrays and develops the characters of the novel. What are the strengths and weaknesses of the main actors in the story? What universal or universals has the author selected? How does he develop them? Remember that a universal is a manifestation of human behavior that can occur in anyone, living anywhere in any time period. Some examples of universals treated in fictional works are love, hate, sacrifice, revenge, greed, loyalty, and pride. Your analysis should show how the novelist develops his chosen universal(s) in the thought and behavior of his characters.

MONTGOMERY COLLEGE
Humanities/Social Sciences Cluster
Germantown Campus

October 12, 1987

CRITICAL THINKING

by R. Appel

Teaching "thinking skills" in the social sciences: (Some examples)

1. By the example of reasonably organized course materials;
2. Where appropriate, by describing examples of social science research;
3. Instruction in study and examination taking skills;
4. Requiring "reading reports" which expect the students to indicate what the book really "said to them";
5. The posing of serious, recurring questions the society must face;
6. By asking examination questions that call for: explanation, description, comparisons, contrasts, analysis, etc.

I am somewhat troubled by what may be the emphasis in all of this. The social sciences basically are concerned with the application of the scientific method to the study of society and its problems. When this method is applied (and it is the thinking method of the pragmatists, especially John Dewey) the emphasis is upon objectivity and the elimination of bias (which includes values). Put somewhat differently it is an empirical approach.

Certainly there is much to be learned as a result of this empirical approach but it does not represent the totality. Society cannot, in my judgment, survive without dealing with values and the use of rational thought as contrasted to empirical thought. Therefore, some emphasis on this rational, value approach is necessary. Here, of course, the humanities came into the picture.

The humanities, therefore, are and should be involved in the balanced approach to the teaching of "thinking skills". It seems to me that as a total educational system we have emphasized and taught the empirical thinking skills with some degree of success. Our failure, in my judgment, has been in our failure to teach abstract, rational thought. In this failure I believe that values have been seriously "short changed", and this has contributed to many of our more serious social problems.

MONTGOMERY COLLEGE
Humanities/Social Sciences Cluster
Germantown Campus

October 12, 1987

CRITICAL THINKING

by H.P.G.H. Thomas

I teach the following courses:

EC 103 - Economic Development--An Economic History Course
EC 201 - Principles - Macroeconomics
EC 202 - Principles - Microeconomics
EC 203 - Economics of Banking
EC 207 - Investment Strategy

One of the most difficult tasks of an economics professor is to teach students, young and old, to absorb and think "economically" the various facets to the "economic equation". The various laws, rules and factors often discourages the neophyte; accordingly, I feel it to be my task to point out that every aspect of life, including love and religion are related to economics.

To achieve the end result of making students think along economic "lines", I have found it most profitable to use the daily paper, usually the Wall Street Journal, and by extracting from articles therein, something of concern and moment to them.

I will take the 1.9% auto loans as a point. Then by using supply and demand, elasticity of demand and supply, over-production, marginal costs, labor costs and foreign competition, the rules for which are in the supplied texts, and which they have learned, and then ask the students to explain, in economic terms, why the auto companies found it necessary to sell cars at 1.9% loans. This method makes the student think. It is interesting to see them look at Ford, GM, and Chrysler's problems in this context.

I use this method in every class. To analyze the falling stock market as caused by the U.S. trade and budget imbalance, the falling dollar, the high debt, and the infusion of foreign capital into the U.S. market and the law of falling expectations, puts a new light on this problem. Thus by taking various articles from the daily papers and analyzing them works wonders for each student.

a. i) F. Joseph McGrane
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301-983-1076 (home)

b. Since most of our students take the general psychology course, the procedures listed below are introduced into this course primarily to explain the course content and only secondarily to constitute course content:
i) cause-effect relationships (i.e. one effect can have different causes; a single cause can produce more than one effect);
ii) forms of definition (i.e. descriptive, operational, etymological, and essential);
iii) forms of predication (i.e. univocal, equivocal, and analogical);
iv) the logic of categorization (i.e. mutually exclusive categories, overlapping categories);
v) reasoning (induction and inference; deduction and conclusion; logical fallacies);
Let's examine item "iv" above: viz. "categorization." The students are shown three overlapping circles on the board; the circles carry the following labels: mental retardation, neurological lesion, personality disorder. These three overlapping circles provide the following seven (7) subsets: 1) mental retardation only , 2) neurological lesion only, 3) personality disorder only, 4) mental retardation and neurological lesion, 5) mental retardation and personality disorder, 6) neurological lesion and personality disorder, and 7) mental retardation, neurological lesion, and personality disorder. The purpose of this demonstration is to indicate how difficult it is to "know for sure" whether a person requires educational help (i.e. the mental retardate), neurological assistance (the person with a neurological lesion), psychiatric support (the patient with a personality disorder), or some combination of two or all three professionals.

c. Each semester I have 175-to-200 students in general psychology; the classes average 35 students. Most of our students are in their first year (circa 90%), 45% being male and 55% female. Some of these classes meet for 50 minutes three times a week; others meet twice a week for 75 minutes each.

d. In my judgment, one of the most significant mental powers is reasoning; this skill is not, however, a simple one. It begins, I believe, with definitions of both subject and predicate terms; this defining process is followed by relating subject to predicate in one of a variety of ways as: a) a contrary, ii) a contradictory, iii) a genus, iv) a species, v) a quality, vi) a quantity. The relationships of subject and predicate are propositions; and it is the proposition which takes on names such as: judgment, decision, conclusion, inference, and even delusion.

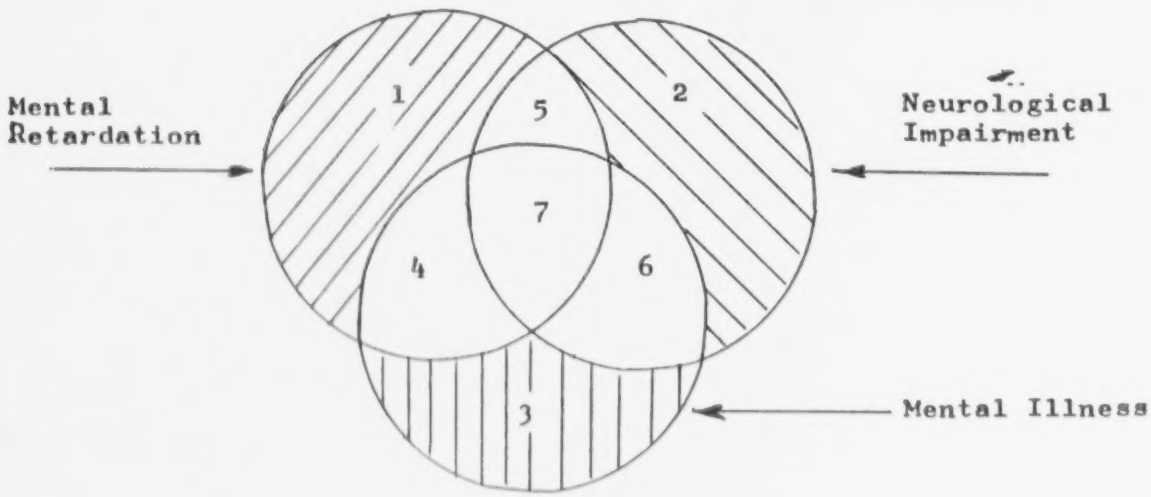
GENERAL PSYCHOLOGY (PSYC 101)
SUMMER (I): 1987

OVERLAP OF THREE CONDITIONS: MENTAL RETARDATION, NEUROLOGICAL IMPAIRMENT, AND MENTAL ILLNESS

It is often difficult to know if a family member is only mentally retarded, only neurologically impaired, only mentally ill; or, as is sometimes the case, if the child or parent suffers from some combination of two or three of these conditions.

In the figure below, each of the three categories is represented as a circle; each circle overlaps the others. It is clear from this representation that seven categories exist. Examples of the categories are given below the figure.

OVERLAP OF THREE MAJOR DIAGNOSTIC CATEGORIES



Name of Condition	Area	Description
Autism	1	Mentally Retarded Only
Cerebral Palsy	2	Neurological Impairment Only
Conversion Hysteria	3	Mental Illness Only
Down's Syndrome (Mongolism)	4	Mental Retardation + Neurological Impairment
Psychopaths (Some)	5	Mentally Retarded + Mental Illness
Alcoholic Psychosis	6	Neurological Impairment + Mental Illness
Alzheimer's Disease	7	Mentally Retarded + Neurological Impairment + Mental Illness

Critical Thinking in a Presidential Election Course

by Dr. Larry Madaras,
Associate Professor of Social Sciences
Howard Community College
Columbia, Maryland 21044

Description of Project

ST 431 is a special topics course on Presidential Elections. It was taught for the first time in the spring of 1988 by Dr. Larry Madaras, an American historian by training who also teaches the American Government and State and Local Government courses.

Dr. Madaras tried to capture the spirit of the primary season by assigning students to follow the campaigns of the individual candidates. Two major papers, designed to capture the spirit of the Super Tuesday primaries, were assigned. The criteria for Paper One of approximately 2,000 words in length is listed below.

Criteria for Paper One: 2,000 words due on March 3rd

Purpose of paper is to follow the campaign of a particular candidate. Each student will analyze the candidate's campaign and predict the election result in the following five (5) states: Maryland, Virginia, Georgia, Texas, and Massachusetts.

Be sure to include the following in your paper:

a. one paragraph profile of your candidate.

b. five paragraphs analyzing the political climate and demographic patterns in Maryland, Virginia, Georgia, Texas, and Massachusetts.

c. Contact Maryland state campaign headquarters and the Howard County headquarters of the candidate you are following. Contact one or two delegates who support your candidate and follow his campaign. Analyze the Maryland campaign in four (4) paragraphs.

d. Analyze the campaign of your candidate regarding:

   1. Issues.
   2. Advertising.
   3. Use of Media.
   4. Money spent.
   5. Standing in Polls (did he rise or fall?)

e. Predict what place in Maryland and the 20 other march 8th Super Tuesday states your candidate will come in. What effects will the Super Tuesday result have on your candidate?

Criteria for Paper Two: limited to 500 words

Its purpose was to compare the student's predictions of the Super Tuesday primaries with the actual results. The student was also to describe how his/her candidates and supporters ran their respective campaigns in Maryland and Howard County. Sources should include newspapers, television, radio accounts and personal observation at the voting polls.

What Actually Happened

This was the first time the instructor has taught the Presidential Elections course. Therefore, the criteria for the papers was established on a random selection of points to be included. Ten students, out of seventeen students who were enrolled in the course for credit, handed in their papers on time. They varied in quantity and quality. There were numerous problems. Several students generalized almost the entire campaign instead of focusing upon their individual candidates. Most tried to cover all twenty states instead of the five listed. None analyzed the money spent for ads, the use of media and the specific types of advertisements employed in the campaigns. There was difficulty analyzing the campaign in faraway states like Texas and Georgia.

On the positive side there were several sophisticated analyzes of how the individual candidates fared on a state by state level. Two focused on a specific issues which their candidates emphasized in the campaign. A number of people worked the polls and tried to do an exit poll. The most successful exit poll was conducted by the seventh grade son of a student who received specific answers from 43 of 58 people interviewed. Four questions were asked and the results were systematically tabulated by the students.

Summary

The assignment was generally successful. Criteria needs to be upgraded to include more specific course content, especially regarding campaign financing, polling and the use and misuse of campaign advertising. Hopefully there will be another Super Tuesday which occurs half-way through the semester when this course is taught again in 1992.

THINKING IN THE CLASSROOM
AN EXAMPLE

a. John Bouman, Howard Community College, Columbia, Maryland, 21044. Telephone: 992-4873 (work), 498-5675 (home).

b. Students in Principles of Economics are encouraged to arrive at value statements (judgments, opinions) by, among other means, participating in a formal debate and daily "what's news in the world of economics" discussions. One of the primary objectives for students in Principles of Economics is the ability to understand and analyze newspaper, magazine and book information with economic content. One aspect of economics is what economists call "positive economics". These are facts, proven relationships, statements which can be tested. The other is "normative economics": value statements, relationships which can not be tested, judgments, etc. For students to arrive at a judgment or value statement they must first be knowledgeable of related positive economic information. For instance if someone's belief (normative economics) is that more money should be spent on the nation's welfare programs, (s)he must be familiar with the consequences of this action (positive economics). In principles of economics students learn the positive economics and are strongly encouraged to apply this knowledge to arrive at value statements on a variety of issues.

c. Principles of Economics (Micro and Macro), 35 to 45 students, about 60% females and 40% males: even mix of freshmen and sophomores; no more than 3 students of 35 will go on to become professional economists; most will enter the business world as owners, managers, specialists, accountants, etc. The class meets for 80 minutes twice a week for 14 weeks. In the near future students will be required to have taken the beginning college writing course as well as an elementary math course.

d. The daily (i.e. each class) "what's news" discussions require students to read newspapers, magazines, or listen to news with economic content. Students are then asked to share their information with the class at the beginning of each session. Controversial issues often arise (should we eliminate welfare programs; raise taxes; protect our domestic industries from foreign competition; reregulate the airline industry; encourage socialist policies, etc?). Students express and support their opinions. I ask a lot of questions and sometimes play the devil's advocate. Through the debate students are asked to do the same thing, but in a much more formal way (see handout).

e. I don't formally teach students to discuss these issues, other than leading the discussions and providing the attached handout. Students learn to think logically, form and support their opinions, and argue by participating, listening to other students, who are skilled at this, and participating a little more.

THE GREAT DEBATE

Notes on the format and evaluation

Principles of Economics
Mr. John Bouman

Each debate will be a discussion by two panels - a pro and a con side - on a relevant economic topic. Each panel will consist of between three and six persons. The length of the entire debate varies depending on the number of panel members and the involvement of the issue. On average a debate should last about 55 minutes.

The debate will be structured and the two panels may choose their own structure. The following is one suggestion as to how the debate may progress:

The Stater of the Yes-side outlines the position of his/her team. This statement may be very brief (1-2 minutes) and merely informs the listeners what the main opinion of the Pro-side is.

The Con-stater outlines the position of his/her team.

The Pro-prover presents supporting evidence for the position of his/her side. The stater has stated an opinion: it is now the task of the prover to explain to the audience why the Yes-side believes what it believes.

The Con-prover presents his/her supporting evidence.

The Yes-attacker refutes arguments that were brought forth by the No-side so far. Throughout the debate the attacker should be taking notes of the arguments the other side has presented. Where appropriate the attacker should question and counterargue these points.

The No-attacker convinces the audience why what the Yes-side has said is invalid or irrelevant.

The Yes-answerer may add additional supportive evidence which the other team members may have neglected to present.

The No-answerer may do likewise.

If time, panel members may at this point argue back and forth to further convince the audience.

The Yes-answerer and the No-answerer will answer questions from the audience.

The Yes-stater will summarize the position of his/her team.

The No stater will summarize the position of his/her team.

Panel Evaluation

Each member of the debate will receive two grades:

1. a team grade which is determined by the average ratings of the instructor (50%) and students in the audience (50%).
2. an individual grade determined by the instructor based on the instructor's and students' evaluations.

Each component is worth 30 points for a maximum total of 60 points.

Debate teams and members will be evaluated on:

1. thoroughness of preparation
2. ability to present supportive evidence
3. organization of the delivery
4. effectiveness of the delivery (never read any statements; use your own words; 3 x 5 index cards are ok)
5. overall debate participation

Research

Information related to your issue may be found through a number of sources: newspapers (Wall Street Journal, New York Times, Washington Post, Baltimore Sun, etc.), magazines (Fortune, Barron's, Forbes, Nation's Business, The Economist, The Margin, Time, Newsweek, etc.), books (i.e. your text!) and other publications. A book which most likely contains articles directly related to your issue is "Taking Sides: Clashing Views on Controversial Economic Issues" (on sale in the bookstore and on reserve in the library).

To easily locate other articles on your topic consult the reference librarian if necessary, or myself.

Team Meetings

Members on the same panel should meet minimally twice before the debate to share research, papers, opinions, etc., and to determine who will state, prove, attack, or answer. At least once during the semester I will allocate class time to enable you and your team members to meet.

Selection of the Panels and Debate Topics

If you are interested in participating in a debate I will ask you during the second week of classes to select team members whom you would like to debate with, i.e. you choose your own panel. You will also have selected an appropriate economic topic which lends itself for a challenging debate. Attached please find a list of suggested topics.

Note: you will not know until three classes before the debate which side of the debate you will be discussing. You should therefore be familiar with both sides of the issue.

An audiocassette of a microeconomics debate is on reserve in the library, FYI. If you have further questions about the debate, don't hesitate to ask.

Good luck and enjoy!

a. Jim Bell, Howard Community College, Columbia, Maryland, 21044
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b. Students in General Psychology are taught to critically evaluate secondary psychological sources by using a 6 step procedure. The first two steps involve understanding the source while the third step involves looking carefully at important definitions. Students have difficulty understanding the terms "constructs" and "operational definitions" which are a part of Step 3. Several different class and homework activities will be described to explain how I teach these related concepts.

c. General Psychology, 55 to 65 students; 67% are females, 33% are males; 80% are freshmen while 20% are sophomores; only 10% are psychology majors. The class meets for 80 minutes on Tuesday and Thursday for 14 weeks. Students must be ready to take the beginning college level writing course before they can take General Psychology. General Psychology is then a prerequisite for all other psychology courses.

d. Learning to critically evaluate secondary sources in psychology involves paying attention to definitions. Most General Psychology students across the country study in their psychology textbooks the chapters on research methods and thinking. Rather than recalling the material for a test, students in my class are taught how to use the ideas in these two chapters to critically evaluate secondary sources of psychological information.

When reading about psychological topics, it is important to know if the key terms are defined and how they are defined. Students receive information and practice on reading carefully to note if key terms are defined and how. The exercises on paying attention to definitions are a part of the broad thinking process of critical thinking which is the thinking skill most stressed in General Psychology.

TEACHING CONSTRUCTS AND OPERATIONAL DEFINITIONS

1. Course Goals are given out the first class and students are asked to read them for the second class. During the second class I highlight critical evaluation (critical thinking) as the most important and valuable thinking skill taught in the course.

2. During the fourth week I present a 10 minute mini-lecture on important terms studied so far (shyness, perception, behavior modification, learning). I indicate that it is very important that authors define the key terms they use. The idea that it is important to look at how writers define their key terms is also stressed.

3. During the seventh week students read a handout on psychological research methods which includes one page on constructs and operational definitions. Examples are given and practice items are given with answers. At this point I am interested only in the students being able to report that constructs and operational definitions are important.

4. During the eighth week the construct "aggression" is analyzed. Various definitions are given and lecture covers the importance of realizing which specific type of aggression (which operational definition) is being discussed in a source.

5. During the ninth week students read a two page description of operational definitions and constructs before class. Examples are given followed by practice items with answers. Part of the homework involves identifying constructs and operational definitions.

6. During the next class groups of 3 students are set up to do a 15 minute exercise. An exercise is undertaken to clarify the need for operational definitions. One-half of the class is asked to go into the hall on the second floor of the classroom building and count the doors in the hall. Each group is to come up with its own definition. One-half of the class are asked to count signs. The groups are asked to start at different places in the hall so that they do not hear how others are counting.

The groups return and put on the board their answers. Usually the door groups do not come up with the same answers but a few of the answers are close. Groups counting signs never agree. The full class discusses why there are different answers. I tie in the class exercise to the importance in research of operational definitions and the importance for psychology students to note how the constructs are defined and measured in secondary sources.

7. At the end of the course students are asked to identify constructs that are not operationally defined as a part of critically evaluating a secondary source which they have not previously seen.

(Note: Teaching students about constructs and operational definitions still does not go smoothly for me. I would be interested in knowing of other techniques you use.)

A PROJECT REQUIRING THINKING SKILLS: COMPARING AND CONTRASTING TWO TEXTBOOKS

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b. In my Logic and Critical Thinking course I use two textbooks. For the first homework assignment I want the students to compare and contrast the two textbooks to learn about what might be the topics covered in the course. On the next pages are the assignment sheets.

c. Logic and Critical Thinking enrolls about 25 students and meets on T,TH for 80 minutes for 14 weeks. The class has 2/3 women, 2/3 between 18 and 22. There is no prerequisite although most students have completed 15 credits.

d. Compare and contrast is used as a part of synthesis which is taught later in the course.

WHAT IS LCT ABOUT? HINTS FROM LOOKING AT THE TEXTBOOKS.

Discovering what a course is about can be done in various ways. One way is to search through the textbooks. You could check through the first textbook and record your data. Then check through the second textbook and record your data. And then stop.

Another approach would be to use the thinking skills of comparing and contrasting to develop a better idea of what might be in the course. The 2 textbooks would be studied side-by-side. Before comparing and contrasting the textbooks, let's reflect for a moment.

Let's assume that you have a rough idea of what the words mean but you want to become clear on their meaning. Where might you go to become clear on what is meant by these two words?

1. You might check to see if either textbook has a glossary.
2. You might check in the indexes of the two textbooks and read the relevant pages.
3. You might check in a dictionary.
4. You might check a thesaurus.
5. You might check with a family member or a friend.
6. You might check in a book you used for an English course.
7. You might go to the library and check in an unabridged dictionary or another reference book.
8. You might check...

To save you time I have done some library research and then put that information here. I then pulled together the ideas using the thinking process of synthesis.

Compare, contrast, synthesis, research -- these are some of the thinking skills that we will be working on during this course.

Here is some information about synthesis.
"Synthesis - 1. the assembling of separate or subordinate parts into a whole: opposed to analysis. 2. A complex whole composed of originally separate parts." (Funk and Wagnalls Standard College Dictionary, 1977, p. 1360)

"A synthesis is a piece of writing that combines information and ideas from two or more sources. It follows that your ability to write syntheses depends upon your ability to infer relationships among essays, articles, and the like. This process is nothing new for you, since you infer relationships all the time--say, between something you've read in the newspaper and something you've observed for yourself, or between the teaching styles of your favorite and least favorite instructors. In fact, if you've written research papers, you've already written syntheses. In an academic synthesis, you make explicit the relationships that you have inferred among separate pieces of writing." (Behrens and Rosen, Writing Across the Curriculum, 1982, p.7). Synthesis is a pulling together into a unified whole.

Here is your assignment.

CRITICAL THINKING

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SECTIONS OF TEXTBOOKS USEFUL TO TEACHING CRITICAL THINKING IN THE SOCIAL SCIENCES

Barry, V. (1984). Invitation to critical thinking. NY: Holt, Rinehard and Winston. See chapter 3 on advertising, television, and news.

Barry, V., & Soccio, D. (1988). Practical logic (3rd ed.). NY: Holt, Rinehart and Winston. See chapter 12 on "Statistics."

Browne, M., & Keeley, S. (1986). Asking the right questions: A guide to critical thinking. Englewood Cliffs, NJ: Prentice-Hall. See chapters 8-10 on evidence.

Cederblom, J., & Paulsen, D. (1986). Critical reasoning (2nd ed.). Belmont, CA: Wadsworth. See chapter 11 on decision making.

Grovier, T. (1985). A practical study of argument. Belmont, CA: Wadsworth. See chapters 11 and 12.

Grovier, T. (Ed.). (1988). Selected issues in logic and communication. Belmont, CA: Wadsworth. Has 16 articles on a variety of topics.

Fearnside, W. (1980). About thinking. Englewood Cliffs, NJ: Prentice-Hall. See chapters 19 - 23 on evidence.

Halpern, D. (1984). Thought and knowledge: An introduction to critical thinking. Hillsdale, NJ: Lawrence Erlbaum Associates. See chapter 5 "Understanding Probabilities"; 11 on "Applications of Critical Thinking."

Huck, S., & Sandler, H. (1979). Rival hypotheses: Alternative interpretations of data based conclusions. NY: Harper and Row. 100 excerpts from the mass media and social science journals are presented for students to evaluate. Answers are given.

Kahane, H. (1988). Logic and contemporary rhetoric. Belmont, CA: Wadsworth. See chapters on advertising, the news, and textbooks.

Moore, W., McCann, H., & McCann, J. (1985). Creative and critical thinking (2nd ed.). Boston: Houghton Mifflin. See chapter 6 on "Evaluating Evidence."

Newman, R., & Newman, D. (1969). Evidence. Boston: Houghton Mifflin.

Toulmin, S., Rieke, R., & Janik, A. (1984). An introduction to reasoning. NY: Macmillan. See chapter 24 on historical reasoning, 26 on legal reasoning, 29 on management, and 30 on ethics.

Waller, B. (1988). Critical thinking: Consider the verdict. Englewood Cliffs, NJ: Prentice-Hall. Approaches critical thinking from the point of view of a trial.

Wright, L. (1982). Better reasoning. NY: Holt, Rinehart and Winston.

FILMS RELEVANT TO TEACHING CRITICAL THINKING

Critical Thinking. (1971). 11 minutes, color, film. Coronet Instructional Films. 65 E. South Water Street, Chicago, IL 60601

Eye of the Beholder. (1953). black and white, film. Stuart Reynolds Productions.

Statistics At A Glance. (1972). 25 minutes, color. film. John Wiley and Sons. Made by Helios Films.

Think Twice: The Persuasion Game (1978). 19 minutes, color. film. Churchhill Films. 662 North Robertson Blvd., Los Angeles, CA 90069.

Think Twice: They're Confusing You. (1978). 19 minutes, color, film. Churchhill Films. 662 North Robertson Blvd., Los Angeles, CA 90069

Twelve Angry Men. This feature film is now available on videotape.

NOTE: I would like to know about films which can be used to teach critical thinking, creativity, or problem solving. Please send me information about films you have found useful.

SOURCES WHICH CONTAIN EXAMPLES OF CRITICAL THINKING IN THE SOCIAL SCIENCES

BOOKS

Bell, P. B., & Staines, P. J. (1979). Reasoning and argument in psychology. Boston: Routledge & Kegan Paul.

Brown, M. N., & Keeley, S. M. (1986). Asking the right questions: A guide to critical thinking. Englewood Cliffs, NJ: Prentice-Hall.

Katzer, J., Cook, K. H., & Crouch, W. W. (1982). Evaluating information: A guide for users of social science research (2nd ed.). NY: Random House.

Mayo, C., & LaFrance, M. (1977). Evaluating research in social psychology: A guide for the consumer. Monterey, CA: Brooks/Cole.

Rubinstein, J., & Slife, B. D. (Eds.). (1984). Taking sides: Clashing views on controversial psychological issues (3rd ed.). Guilford, CT: Dushkin Publishing Group.

Stern, P. C. (1979). Evaluating social science research. NY: Oxford.

Wade, C., & Tavris, C. (1987). Learning to think critically: A handbook to accompany Psychology. NY: Harper and Row.

ARTICLES IN PSYCHOLOGICAL JOURNALS (a few examples)

Child, I. L. (1985). Psychology and anomalous observations: The question of ESP in dreams. American Psychologist, 40, 1219-1230.

Crossman, E. (1983). In response: Las Vegas knows better. The Behavior Analyst, 6, 109-110.

Fancher, R. E. (1987). Henry Goddard and the Kallikak family photographs: "Conscious Skulduggery" or "Whig history"?. American Psychologist, 42, 585-590.

Harris, B. (1979). Whatever happened to Little Albert? American Psychologist, 34, 151-160.

Jones, R. A. (1987). Psychology, history, and the press: The case of William McDongall and The New York Times. American Psychologist, 42, 931-940.

Kleinmuntz, B., & Szucko, J. J. (1984). Lie detection in ancient and modern times: A call for contemporary scientific study. American Psychologist, 39, 766-776.

Linz, D., Donnerstein, E., & Penrod, S. (1987). The findings and recommendations of the Attorney General's Commission on Pornography. American Psychologist, 42, 946-953.

McKelvie, S. (1984). Left-wing rhetoric in introductory psychology textbooks: The case of mental illness. Psychological Reports, 54, 375-380.

Stein, M. I. (1984). A minority of one, a crackpot (?), in an introductory psychology textbook. Perceptual and Motor Skills, 59, 730.

Todd, J. T., & Morris, E. K. (1983). Misconception and miseducation: Presentations of radical behaviorism in psychology textbooks. The Behavior Analyst, 6, 153-160.

ARTICLES FROM THE MASS MEDIA (a few examples)

Alter, J., & Fineman, H. (1987, October 5). The fall of Joe Biden: A cautionary tale of high-tech politics. Newsweek, p. 28.

Barber, T. X., & Meeker, W. B. (1974, August). Out of sight, out of mind. Human Behavior, pp. 56,59,60.

Berg, P. (1987, December 1). Suicides decline during holidays, study finds. The Washington Post, Health, p. 5.

Best, J. (1985, November). The myth of the halloween sadist. Psychology Today, pp. 14,16.

Brand, D. (1987, June 1). "It was too good to be true.": Faking data: A mental-retardation researcher faces grim charges. Time, p. 59.

Carlson, P. (1987, December 27). The Academy Awards of untruth: Remember: If it weren't for official lives, Indians would still own your backyard. The Washington Post Magazine, pp. 29-35.

Cohen, R. (1988, May 22). An epidemic of inaccuracy. The Washington Post Magazine, p. 11

Colburn, D. (1985, August 28). Hair testing called a sham: Identical locks yield sharply different results at 13 labs, study finds. The Washington Post, Health. p. 9.

Colburn, D. (1987, November 3). Guns, rape and responsibility: Police chifes, victims' groups critize NRA's new handgun campaign. The Washington Post, Health. p. 7.

Cornell, J. (1984, March). Science vs. the paranormal. Psychology Today, pp. 28-34.

Fumento, M. (1988, April 4). The AIDS cookbook: Masterns and Johnson's recipe for hysteria. The New Republic, pp. 19-21.

Glick, P. (1987, August). Stars in our eyes. Psychology Today, pp. 6-7.

Greenberg, D. S. (1988, April 24). Lab-scam: How science goes bad. The Washington Post, p. D3.

Harrington, W. (1987, December 27). Revenge of the dupes: Every life demans a dupe, and dupes get even. The Washington Post Magazine, pp. 17-21.

Mayer, C. E. (1987, June 19). FTC charges Kraft Inc. with false advertising. The Washington Post, pp. F1,3.

Montgomery, P. (1987, September/October). Playing with numbers: When in doubt, cite a statistic. Common Cause Magazine, pp. 38-39.

Rosenthal, E. (1983, April). Myth of the man-eaters. Science Digest, pp. 10, 11, 12, 14.

Simon, J. L. (1987, August 9). 'Batter's Slump' & other illusions. The Washington Post, p. C3.

Streitfeld, D. (1987, November 10). Shere Hite and the trouble with numbers. The Washington Post, pp. B1, 4.

Tierney, J. (1987, November). Fleecing the flock. Discover, pp. 50-58.

Vobejda, B. (1987, December 6). U. S., Soviet textbooks give different accounts of history. The Washington Post, pp. A29, 35.

Webb, J. (1986, April 6). Viet vets didn't kill babies and they aren;t suidical. The Washington Post, pp. C1, 2.

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